

Claims:

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2 1. In a power converter, comprising:  
3 an input for accepting a DC voltage;  
4 a power transformer including a primary and secondary winding;  
5 a power switch for periodically connecting the input to the primary  
6 winding;  
7 an output for accepting a load to be energized;  
8 clamping means for limiting a voltage across the secondary winding  
9 during a first interval of a cyclic period of the power converter;  
10 a rectifier circuit connecting the secondary winding to the output; and  
11 including:  
12 a synchronous rectification device with a control terminal connected to  
13 be responsive to a signal across the secondary winding such that the synchronous  
14 rectification device conducts a load current during the first interval; and  
15 a diode connected for enabling conduction of the load current during a  
second interval other than the specified interval.

1 2. In a power converter, comprising  
2 an input for accepting a DC voltage;  
3 a power transformer including a primary and secondary winding;  
4 a power switch for periodically connecting the input to the primary  
5 winding;  
6 an output for accepting a load to be energized;  
7 clamping means for limiting a voltage across the secondary winding  
8 during a first interval of a cyclic period of the power converter;  
9 a rectifier circuit connecting the secondary winding to the output; and  
10 including:  
11 a first synchronous rectification device with a control terminal connected  
12 to be responsive to a signal across the secondary winding such that the synchronous  
13 rectification device conducts a load current during the first interval, and  
14 a second synchronous rectification device with a control terminal  
15 connected to be responsive to a signal across the secondary winding such that the  
16 second synchronous rectification device conducts the load current during a second  
17 interval other than the first interval.

1 3. In a power converter as claimed in claim 1 or 2, comprising:

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2 the converter connected to operate as a forward type converter.

1 4. In a power converter as claimed in claim 1 or 2, comprising:

2 the converter connected to operate as a flyback type converter.

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3 5. A switching mode power converter, comprising:

4 a power transformer including a magnetizing inductance requiring

5 periodic recycling;

6 a first power stage for converting a DC input into a periodic pulsed

7 voltage applied to a primary winding of the transformer, including:

8 a clamping circuit for limiting a voltage of the transformer during the

9 periodic recycling;

10 a second power stage for rectifying an output of a secondary winding of

11 the transformer and applying it to a load to be energized, including:

12 a synchronous rectifier including a first rectifying device with a control

13 gate connected to be responsive to a signal across the secondary winding such that

14 the synchronous rectification device conducts a load current during the periodic

15 recycling when the clamping circuit is active, and

16 a second rectifying device connected for enabling conduction of the load

17 current when the first rectifying device is nonconducting.

1 6. A switching mode power converter as claimed in claim 5, further

2 comprising:

3 the second rectifying device comprises a diode.

1 7. A switching mode power converter as claimed in claim 5, further

2 comprising:

3 the second rectifying device comprises a rectifying device with a control

4 gate connected to be responsive to a signal of the secondary winding.

1 8. A switching mode power converter as claimed in claim 6 or 7, further

2 comprising:

3 the secondary winding tapped and separated into first and second

4 winding segments, and the first rectifying device is connected to the first winding

5 segment and the second rectifying device is connected to the second winding

6 segment.

1                   **9.** A switching mode power converter as claimed in claim 6 or 7, further  
2 comprising:  
3                   the converter connected to operate as a forward type converter.

1                   **10.** A switching mode power converter as claimed in claim 6 or 7, further  
2 comprising:  
3                   the converter connected to operate as a flyback type converter.